BLENDED LEARNING IN CULINARY ARTS:

A CASE STUDY IN LEARNING AND PERCEPTION

By

Naomi S. Everett

RECOMMENDED:

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Dayna J. DeFeo, Ph.D.
Chair, Advisory Committee

APPROVED:

_____

Bonnie K. Nygard, M.Ed.
Interim Dean, Community Technical College

_____

Date

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A

PROJECT

Presented to the Faculty

of the University of Alaska Anchorage

in Partial Fulfillment of the Requirements

for the Degree of

MASTER OF SCIENCE

By

Naomi S. Everett, B.S.

Anchorage, Alaska

May 2016

Abstract

There is great need for skillful culinary employees for a wide variety of positions in the hospitality, hotel, and restaurant industry. Culinary school provides a baseline educational experience for students looking to pursue this career field. Culinary instructors find themselves obligated to discover ways to promote student learning in classic culinary competencies while evolving with a population that is tech-savvy and requires more than the standard lecture and rote memorization of materials. This paper describes an exploratory study that incorporated videos as part of a blended learning model in a traditional face-to-face culinary arts class at the University of Alaska Anchorage. The curriculum was on poultry fabrication, and data collection focused on students' skills and their perceptions of the blended learning activities. Initial feedback suggest that including videos in the culinary arts classroom facilitates learning, and though they cannot replace in-class live demonstrations, are beneficial educational accompaniments. Recommendations for practice and implications are discussed.

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Acknowledgments

The completion of this project could not have been possible without the immense efforts and support of my family, instructors, department, friends, and students. I did not have a clear vision of where this journey would end and now, at the end of the pursuit of my diploma, I realize this is but a milestone that has put my life in motion onto a new road I had been seeking: to change how culinary arts is being taught at UAA and to be a greater support to my students' learning through my teaching methodology.

I have to give great thanks to my immediate family for being understanding of the long hours spent at school, studying at home, and not being as active of member in our close-knit community, especially this last year and with every other activity I piled on top of this load of school work. Bill, thank you for listening to my woes and worries, the endless diatribes about how cool blended learning is when it has no bearing on your own life, and thanks for making all of the efforts you have to help me with volunteering and catering activities during this time. Most of all, thank you for lovingly hanging in there when I thought I would lose my mind!

Thank you to Tech Fellows and Academic & Innovations in eLearning (AI&e) for the support and resources with video production and for enrollment in the Online Learning Consortium workshop teaching certification. Eric Baldwin of AI&e graciously gave his time and expertise to my video productions and he brilliantly edited and formatted the poultry demonstration videos in time for me to complete my research last fall. The AI&e department is one of the greatest resources the university provides for instructors and I am eternally grateful for their help with achieving and defining my vision.

Over the last five years, many instructors and faculty have assisted in this journey. I would like to give special recognition to Lee Henrikson and Dayna DeFeo, both of whom this

last year have been the driving force behind my finishing this project. These dynamic ladies have taught me an unprecedented amount about Blackboard design (Lee) writing and formatting (Dayna) and how to be a better teacher. Each of them have asked me thought-provoking questions that enlightened me to a new perception of how to look at methods in communication and material distribution. They were patient, kind, and befriended me through this process. I cannot stress enough how incredibly grateful and fortunate I am to have had the opportunity to work with them both and what valuable resources these women are to the University of Alaska. Thank you Lee and Dayna from the bottom of my heart!

Thank you to my colleagues within the Culinary Arts department, Tim, Amy, Vern, Anne, Amanda, and Lynette. I have been given complete autonomy through this process to pursue a new way of teaching and your interest and support in this quest has encouraged me to continue. I am lucky to work with such a notable cohort of professionals.

And last but not least, I want to give the biggest thankyou to my students and the culinary community who this degree is primarily for. I have been blessed to have the honor of serving you as your professor and associate. I want you to be successful in everything you pursue and for you to realize your dreams and aspirations. I believe you possess the power to turn mediocrity into extraordinary! You will be the change that creates a higher standard in the hospitality, hotel, and restaurant culture of our community and state. I am so proud to have had the privilege of working with you, knowing you, and seeing your accomplishments. Thank you for this remarkable opportunity.

Dedication

This is dedicated to my Dad, Joe Cuddy. Thank you, Dad, for showing me how to always go above and beyond in every situation with the utmost integrity in heart and mind. You taught me to smile generously, assume the best of others, and what kindness is. This is also dedicated to my mother, Marcia Abalama, who gave me my beginnings in the kitchen, let me put my hands in everything, and who taught me that through thick and thin, your perception is the only thing that binds you.

Chapter 1 Introduction

I graduated in 2000 from the University of Alaska Anchorage (UAA) with an associate degree in Culinary Arts. At that time my main goal and pursuit was to become a professional chef and open my own restaurant with my sister. Never did I imagine that 16 years later I would be an instructor of Culinary Arts and on the cusp of a Master of Science in Career and Technical Education (MSCTE).

I left private sector restaurant industry nine years ago to teach Culinary Arts at UAA; a special and unique privilege for a former graduate. During that period I obtained my Bachelor of Arts (BA) in Hospitality/Hotel & Restaurant Management to further my education. I felt it was necessary to pursue the BA in order to better relate to my students and I had to have the degree in order to secure a tenure-track position with the university. Once I had finished that program, I had no further desire to ever attend college again. At the time, I did not see the need to further my education formally because I had been fortunate to have a number of diverse cooking-related opportunities that kept me professionally engaged and my mind intrigued with new learning challenges.

During the summer months, while off-contract with the university, I have worked as a chef for various restaurants, including remote gold mining or construction camps, catering events, and consulting work. What I have discovered to be constant and true throughout all of these job opportunities is that there is a great deficit of qualified food service employees who possess the skills and reliability required for most restaurants, lodges, hotels, and other food service establishments to run efficiently. This has left me with a strong sense of responsibility to the industry I have come from and am still very much a part of.

Throughout the last nine years of teaching culinary arts, I have been intrinsically driven to find better, more effective ways to impress upon my students the importance of integrity, work ethic, and professional cooking principles demanded by the food service/hospitality industry. Ultimately, I decided to pursue the MSCTE degree to become a better teacher. While trends in different styles of foods come and go, the basic principles of cooking are constant. Like food trends, student populations also change and I believe I must learn to understand, teach, and facilitate to their learning experience with these changes.

Culinary instructors find themselves in a unique position to change the culture of food service through the way we teach. I believe that with the infiltration of celebrity television chefs, the demand for the immediacy of fast food, and our departure as a society from farm-to-table over the last three to four decades, society's knowledge of how to cook has changed. As culinary instructors in the 21st century, we must arm ourselves with the skills to meet the learning abilities of a tech-savvy generation that has grown accustomed to instant results with a click of a button (Berrett, 2012). All the while, we must keep upholding the fierce regime, honor, and commitment to exceptional food and customer service protocol demanded by the food service and hospitality industry.

For years I followed the procedure that had been set out before me in my classroom by the previous instructor, never understanding that there may be a different way to engage students outside of rote memorization, lecture, and practical hands-on lab activities. I found myself and my students just getting by each semester with a general understanding, but in my opinion, clearly lacking a deeper appreciation of important fundamentals. I was left wondering why they could not remember certain facts or techniques. I sometimes questioned whether they were really dedicated to this craft and with some of them, I had reservations about their commitment to

follow along this career track. I did not realize it at the time but I was missing a fundamental component in my delivery of materials - that one piece that could possibly help better connect their interest in cooking to the materials being taught and therefore facilitating a more meaningful learning experience.

While pursuing my BA I took several graduate-level courses that addressed andragogy, and this piqued my understanding of how I needed to change my teaching should I wish to see different results in my students' learning. Thankfully, the MSCTE program has solidified that budding realization by introducing new concepts of not just understanding how the student as an individual learns in the classroom, but also how to understand the learning process, recognize it, and then be responsive to those nuances through the presentation of materials, theories, and concepts (Bolliger, Supanakorn, & Boggs, 2010). I was inspired to seek alternatives to textbook and lab demonstrations by engaging in a different delivery format.

I decided to go beyond developing a project as required for my degree and to actually put my plan to the test by conducting a study. In the fall semester I wanted to be able to conduct a formal investigation to find out if my idea was well founded, and to ascertain what my students thought of the process. This idea was to turn my beginning culinary lab class, CA A103 *Culinary Skill Development* (*Skill Development*), into a blended or web-enhanced environment. While little research has been conducted on the effects off incorporating distance education structures into a culinary lab setting, there is much documentation that similar career and technical fields benefit from this kind of delivery system. I began with one section, or learning module, that is part of the regularly designed curriculum. I created videos to supplement the traditional lecture format and developed a rubric to measure student skills and a survey to measure their perceptions of the learning activity.

Chapter 2 Review of the Literature

Culinary arts prepares students for a competitive job market. According to *The Alaska Occupational Forecast* prediction of the current job market in all areas of restaurant, hotel, hospitality jobs, and management positions within the state of Alaska, the industry is projected to increase no less than 10 percent between 2012 and 2020 (Department of Labor and Workforce Development, 2012). Culinary arts instructors at the University of Alaska Anchorage frequently field calls from chefs and restaurant owners, oil field management, lodges, hotels and retail food service establishments looking for skilled employees to fill all level of positions. The common thread of their communications is that there is a demand for more skilled employees and that the foodservice and hospitality industry has a need to create a culture of seriousness, commitment, and passion from their employees. The time to raise the bar in customer service from hostesses, bussers, and wait staff to back-of-the-house kitchen staff is upon us.

With the rapidly changing world of technology, the way in which students engage with their education has changed as well. Students are not content to sit in classrooms and participate in rote memorization of facts. They have become accustomed to quick and constant stimulation (Berrett, 2012). They require incentives to remain involved, stimulation to generate creativity, and need to feel their time is well spent (Müller, VanLeeuwen, Mandabach, & Harrington, 2009). Meeting this demand in the culinary classroom must blend culinary content with adult learning theory and digital technology.

The Current Landscape of Culinary Arts

Culinary instructors must teach more than just technical skills. While culinary schools provide students with skill sets including menu planning and costing, customer service skills, classic knife cuts and sauce preparation, serving, cash handling, ordering, math, and computer

work, class time needs to make efficient use of skill development so that professional development and communication can be focused on as well. Competencies in principles of food include an understanding of the chemistry of composition and structure of food, and how biology and microbiology affect health and safety aspects of food handling, sanitation, nutrition, and proper storage techniques. The food service and hospitality industry also mandates that the competency of consumers' preferences and psychology be carefully studied. A successful hospitality/food service worker must be innovative in menu offerings, current with trends, conscientious of how service and atmosphere are perceived by the guest, be well versed in the art of interpersonal communication, and have a strategy in dealing with complaints and the ability to recapture lost patrons (Hu, 2010). Changes in agriculture, technology (food technology), food science, and culture dictate that culinary schools scrutinize their course offerings and programs to meet the needs of this rapidly changing industry (Müller, et al., 2009). These varied and multifaceted skills are what are referred to as culinary competencies.

Culinary competencies "can be seen as a molar concept similar to the concept of intelligence, with its major components being skills, judgment, attitudes and values, knowledge, ability and capacity" (Hu, 2010, p. 2). Currently, there are more than 1,100 culinary schools in the United States that are certified by the American Culinary Association (National Restaurant Association, 2015). The University of Alaska was just added to that list in fall of 2015. What comes into question is whether or not culinary schools are providing a commensurately rigorous learning environment that offer aligned curriculum to promote the learning and retention of these competencies.

Many jobs and performance reviews employ competency based models. "Competency models can be used for training, design, recruitment, selection and assessment; coaching,

counseling and mentoring; career development and successful planning" (Hu, 2010, p. 2). How then can culinary programs furnish graduates proficient in these sought after proficiencies?

Technology in Education

While little documentation can be found on trends in how culinary arts education is delivered, there are large amounts of data collected on the benefits of the rapidly growing popularity of online education delivery methods. Availability of free resources and online sharing, along with students' propensity to seek resources via the Internet, are contributing factors to instructors reinventing how they deliver course content (Tiernan, 2015). Distance education techniques are being introduced into traditional classroom settings in an effort to increase student interest, connectivity, and satisfaction (Cruse, 2006). Digital teaching can allow instructors to redistribute learning through technology. By "including rich media components that endeavor to engage students in active, meaningful learning" (Bolliger, et al., 2010, p. 714), instructors are able to offer educational materials in a more diverse manner. This technique is referred to as a blended or hybrid classroom.

Blended or Flipped Classrooms

A blended or flipped classroom is an environment where what is usually done at home is done in the classroom, and what is done in the classroom is done at home. For example, a student would watch a lecture or demonstration at home and then come to class the following day to discuss the principles and philosophies of the lecture with the instructor and fellow students. Instead of doing homework alone, outside of the classroom, the student has the opportunity to complete the assignments with a group of peers and with the ability to ask questions and potentially gain greater and permanent understanding. Instructors assert that a blended classroom environment improves traditional lecture by veering away from rote memorization and creating

engagement through interaction, often referred to as just-in-time-teaching (Berrett, 2012;Vaughan, 2007).

Student learning. The current research shows no proof that a blended learning environment provides any less of a beneficial educational experience than traditional classroom settings. However, students report that this type of learning environment promotes a greater understanding of concepts in application and writing, and facilitated improved learning outcomes (Bell & Federman, 2013; Vaughan, 2007). Due to the capacity to evoke emotions from an audience, video elicits positive outcomes in affective and motivational learning. Cruse (2006) states that "one of the greatest strengths of television and video is the ability to communicate with viewers on an emotional, as well as a cognitive level" (p. 6).

Student engagement. The pedagogical approach of a flipped classroom embraces student engagement by entailing activity where students are intrinsically motivated; transactional engagement where students engage with each other, teachers, spouses, or significant others; and institutional support, where institutions provide an environment conducive to learning. Chapman (2003) and Kuh (2001) speak to student engagement and success in terms of students' cognitive investment in active participation and in emotional commitment to their learning; it is also evident in the time and energy students devote to educationally purposeful activities. Coates (2008) notes that "students' involvement with activities and conditions are likely to generate high quality learning" (p. vi). Similarly, Leach (2011) writes,

> [s]uccessful institutions have cultures that focus on student success, foreground student learning in their mission, establish high expectations, aim for continuous improvement, invest money in support services, assert the importance of diversity and difference and prepare students for learning in higher education (p. 195).

She states that students are better able to achieve their goals under these circumstances, and advises that operational engagement is the object of a more active learning environment. This model focuses on active citizenship where students learn to self-manage, make decisions, and become self-aware of their potential and purpose in the world (Leach, 2011).

Student benefits. Research also reflects on students' perceived benefits of attending a blended or flipped classroom. Bell & Federman (2013) found that students like the flipped classroom structure. In their study, students perceived that the time they spent outside of the classroom watching lectures or demonstrations allowed them greater time flexibility and control. The capacity to work from home made them feel as if they had greater balance of home life, school, and family. In other studies of flipped classrooms, students reported a greater ability to be in control of their own learning outcomes (Vaughan, 2007).

Instructor benefits. Further reported benefits to instructors when utilizing a blended learning model include greater peer instruction, utilization of faculty time and expertise because of the increased engagement with students during the problem solving phase of the lesson, and greater utilization of facilities because less lecture time is required. It also fosters teaching development, and produces greater student learning outcomes (Bell & Federman, 2013; Vaughan, 2007). The experience also improved student-to-teacher mentorship liaisons.

Gap in the Literature around Culinary Arts

Literature available on blended learning environment is primarily case studies and qualitative studies of preference and perceptions. However, a cultural shift is taking place with college students. Kelly and Lawrence (as cited in Kaufman & Mohan, 2009) talk about the transition from book literacy to screen fluency in society "where video is the new vernacular, a world beyond worlds" (p. 5) and that fluency that students are bring to the classroom is

something that must be linked to with curriculum delivery. Today's college students are well versed in sharing information instantly on peer-to-peer web pages and accustomed to being able to access endless amounts of information via the Internet. As instructors, utilizing the students' developed digital literacy by providing instant access to multimedia materials that address the subject matter being taught could help bridge learning and practice gaps.

With all of the positive studies around blended learning, there are few in the field of culinary arts. Because of culinary arts' unique content and industry expectations, it is a good idea to test this teaching method there. While none of the literature spoke to addressing practice gaps in culinary arts, other technical disciplines, such as the medical field, look at where there is a gap between what the industry professionals are doing measured against what is "achievable on the basis of current professional knowledge" (Accreditation Council for Continuing Medical Education, 2012, p. 1). Bridging this gap requires knowing how to create the appropriate curriculum materials.

Video Instruction in Education

Incorporating video segments into regular curriculum has been found to be effective in emphasizing key learning objectives that are personalized and deliverable outside the classroom (Cruse, 2006). Video technologies have been used in education for many years but the widespread availability of cameras and platforms to upload content, as witnessed in the past ten years, has changed how students use and interact with these technologies and employ them in service of learning objectives. Success in other fields suggest culinary instructors may benefit from incorporating short video presentations of their own creations, or from what is already available online, into their hands-on skills classes to demonstrate course competencies. Doing so, however, would require the creation of new curricular materials.

It is important to understand that all of the current lecture material will not necessarily translate well into video, or exist in video format. Some theories and principles may be better communicated in person. Many learning objectives are better absorbed if delivered in a format where students can view them on their own time and repeatedly (O'Flaherty & Phillips, 2015). Still there is strong evidence that video enriches the teaching and learning experience. Tiernan's (2015) study of the current and future uses of digital video in university teaching found that students like the flexibility of being able to access materials on their own time and as often as they choose. Video presentations have the potential to promote discussion or debate, present and recap ideas, and demonstrate practical examples. Students "value the ability of video to jog their memory, and explain concepts in a more engaging way, when compared to revising using hand-outs and books" (Tiernan, 2015, p. 83). One of the greatest assets in watching video is the ability to

> communicate with viewers on an emotional, as well as a cognitive, level. Because of this ability to reach viewers' emotions, video can have a strong positive effect on both motivation and affective learning. Not only are these important learning components on their own, but they can also play an important role in creating the conditions through which greater cognitive learning can take place (Cruse, 2006, p. 6).

There are key issues to consider before designing a video to implement into course curriculum. An instructor must evaluate what material will best be presented in the form of a video and what audiovisual materials may already exist. There are many video resources already in place and available for uploading and viewing for free. YouTube posts 300 hours of video every minute (Smith, 2015). There are also several web pages that provide the function of finding video materials for use.

There are pros and cons to utilizing existing materials on the Internet as resources in the classroom. A disadvantage with such vast availability of information on the Internet, some scholars fear, is that if the instructor does not offer class specific video resources as tools for students, the students may search the information out themselves and potentially unearth misinformation (Tiernan, 2015). Kong (2014) mentions the importance of being able to "think reflectively and judge skillfully, so as to decide what information is reliable and what actions should be taken during reasoning and problem solving" (p. 161). This is where the instructor must provide guidance to the student through choosing the video materials that will be viewed in combination with the in-class structure.

Students' ability to use and access free Internet content cannot be overstated, and they should be guided in their journey to becoming proficient in information literacy, which Kong (2014) defines as "the mastery of necessary knowledge of gathering, synthesizing, analyzing, interpreting and evaluating information; and the proper attitudes for information processing with an understanding if the rationale behind using information" (p. 161). While encouraging students to develop these critical information literacy skills, when instructors select course materials, they too must employ some kind of critical evaluation of the content. Instructors are tasked with assuring the video content is relevant to the course subject to equip students with accurate information. If the correct materials do not exist, instructors will be charged with having to create their own audiovisual materials and there are many components to consider.

Using video to achieve course learning goals. A clear understanding of what goals students must be able to accomplish is the beginning of mapping out materials to deliver via video presentation. Through the *Backward Design* model (McTighe & Wiggins, 1998), three stages of planning should be realized: identify the results, establish how those results will be

quantified, and then plan on how to deliver the instruction. Research indicates that the application of videos in course delivery provides added benefit to student learning outcomes, motivation, and satisfaction (Bolliger, et al., 2010). Proper construction, delivery, and careful attention to the subject matter are crucial components when considering effectively using video within course content (New York University, 2014).

Industry standards of educational video production. When designing educational video for course instruction, there are recommended industry standards to follow. Vest (2009) notes that careful planning and attention to certain aspects of the project and instructors should consider the following questions:

- What are the outlined course learning goals and length needed to articulate these goals and objectives to the viewer?
- Where and when will the video be shot?
- What kind of budget is there for such a project?
- What equipment or crew will be needed for successful production?

***Length*.** Chunking, in video production, is a common term used in reference to dividing course materials into groups, or a series of short video presentations. These vignettes should be designed to last anywhere from three to seven minutes and never longer than ten. If the subject matter requires longer tutorials, it is suggested that a series of short video presentations be created and linked to one another, referring back to the projected learning outcome (Ng, 2015; Tiernan, 2015). Keeping the viewers' attention with material that is relevant and engaging is an important aspect to consider and the length of a video may determine whether the attention of the student is promoted or impeded. The University of New York's Center for Teaching and

Learning (2014) states that the shorter the video, the better. It is important that the video "grab the students' attention, spark curiosity, and provide value to the course content" (p. 1)

Script. The instructive content should be visually rich and focus on subject matter rather than solely on the technology itself (Cruse, 2006). It is fundamental that a script is written and practiced before recording in order to ensure the intonation and rhythm of speech sounds natural and comfortable to the listener. The writing is read for the ears and not the eyes, therefore it is acceptable to write in a way that is friendly and conversational. Including activities with the media presentation is an important piece of students' retention and understanding of learning outcomes and to promote motivation (Tiernan, 2015). In script design, instructors will look to draw attention or emphasize points of interest by bolding or zooming in on details, closed captioning, and utilizing graphics that draw attention. The inclusion of humor, varied presentations, and opportunities that promote students to individually think about the material are other aspects of a well-developed video presentation (Cruse, 2006). As Anderson, Krathwohl, and Bloom (2001) note, "[i]t is the instructors [sic] task to create a coherent narrative path through the mediated instruction and activity set such that students are aware of the explicit and implicit learning goals and activities in which they participate" (p. 6).

Accessibility. When considering integrating video presentations into a classroom or offering the material in an online format, it is crucial to consider creating accessible resources. Accessibility to audiovisual learning materials must be made available to people who have audio and visual impairments (Equal Employment Opportunity Commission, 1992). Some students may be presented with the barrier of geographical or technology issues of connectivity or low bandwidth for streaming so their special circumstances must be considered and accommodated as well. Creating a transcript for audio and visual recordings can be an immense help with

accessibility to multimedia presentations. For example, if someone is blind and has a Braille output device, they will be able to read the information. Unfortunately, transcripts may not accurately portray the imagery and nuances that are reflected in the simultaneous interaction of the audio and video production. Much information is often relayed through nonverbal communication. For this reason, video should be captioned (DO-IT, 2013). Captioning is the process of converting audio from any type of media, music, or even live performances and presentations, into text that may be displayed on a monitor or any other visual display system. Captioning should also identify the speaker, sound effects, the type of music and more (see National Association for the Deaf, 2015).

Several free resources are available for captioning audiovisual materials. Captions can either be open, part of the video display and always on, or closed, which means the caption is contained within a separate text track and synchronized with the video by the video player (DO-IT, 2013). While most media playing devices support closed captioning, it is important to know which ones do not in order to ensure accessibility when deciding how content will be delivered.

Summary

I teach *Culinary Skill Development* (CA A103) and *A la Carte Kitchen* (CA A201). Both are undergraduate, four-credit courses that are required for the two-year associates and four-year bachelor's degrees. These two courses are a foundational part of developing a rich array of skills in the 60 credit hours students must earn to graduate with a degree in Culinary Arts or Hospitality & Hotel Restaurant Management. Some of the learning outcomes students leave this program with that are directly related to these two classes in particular are,

> The ability to apply theories and concepts of cooking and implement techniques to operate or function in a commercial kitchen, identify sanitation and safety codes and

> procedures necessary to maintain a safe food service facility, and to be able to analyze food cost and implement necessary controls to maintain costs and ensure profitability. (UAA Catalog, 2015, p. 320)

The incorporation of video presentations into the classroom via Internet is a well-documented tool that encourages student engagement, facilitates student ability to retain information, and emphasizes key learning objectives. Blended learning provides an enhanced educational forum supported by data gathered from students, teachers, and administrators who all report that there are more benefits than barriers within this content delivery model. Students report enjoying the freedom of learning at their own pace and benefiting from greater personal engagement. Instructors gain an improved teaching interaction with students and benefit from the opportunities to improve in their course delivery. Through proper development and distribution of online, accessible multimedia, instructors are opening a new realm of possibilities in instruction and delivery.

Presently, little scholarly documentation can be found that evaluates a direct benefit of a blended learning environment within the specific field of culinary arts. However, research on implementation of blended learning models in career and technical education class settings shows strong correlation that lends credit to the benefits in student learning retention and engagement in the flipping of a culinary classroom. The literature review suggests an opportunity to further investigate the impact on student perceptions and learning outcomes when a blended learning environment is implemented in a culinary arts skill development program.

Chapter 3 Method

After extensive study of the literature available concerning blended learning I was able to articulate what questions I wanted answered. I wanted to explore an alternative to lecture for my *Skill Development* class. I perceived that sitting for lecture at 7a.m. for an hour or two every morning was taking away from the time students were actually able to work with the products in the classroom, and therefore prohibiting time to experience the skill sets and principles vital to their learning. Blended learning, as opposed to traditional distance or asynchronous delivery systems, has demonstrated favorable outcomes in other career and technical classroom environments (Bolliger, et al., 2010), but I was unable to find much literature on the effects within a culinary arts setting. I decided to research the results of implementing a blended learning environment by testing it in the two-week poultry module section of my course.

My research question was: how does blended learning impact student learning outcomes and perceptions in a culinary arts skill development program? I addressed the following questions:

- Are students able to skillfully perform fabrication techniques when lecture is substituted with video demonstration?
- Do students perceive the experience to be beneficial to their learning?
- Do students perceive they are able to perform the fabrication techniques on poultry with better proficiency?

Research on blended learning cites that this approach is favorable for greater retention and life-long skillset (Bell & Federman, 2013; Vaughan, 2007). I endeavored to redesign the poultry module of the fall 2015 course as a blended learning module and conduct my study. My expectation from reading the literature was that this method of delivery would have a positive

impact and effect on student learning outcomes. Understanding their perspective on this method of delivery has implications for developing more effective curriculum and instructional techniques in this specific area of career and technical education.

Development of Instructional Tools

When I began this project I had the curriculum in place for the poultry module from the previous years of teaching. The activity is fundamental to the learning process of understanding composition and muscle structure of poultry. In the kitchen laboratory, students are required to cut up chickens and ducks into various pieces. This process is referred to as fabrication. Through fabrication, students are able to recognize the type of meat (white versus dark), how the grain of the meat runs (muscle bundle composition), load bearing muscle tissue, and fat content. The objective is for them to gain a fundamental knowledge of not only how to fabricate, but also what cooking techniques are designed for each part of the animal according to its structure (e.g., moist heat cooking for load-bearing muscle and dry heat cooking for sedentary muscle tissue).

The technology I used was videos of chicken and duck fabrication that I created with the help of UAA's Academic Innovations & eLearning (AI&e) department. In my literature review I reviewed best practices in video production development and with AI&e, through Tech Fellows, I was able to create two, 10-minute long video presentations, consistent with those best practices for video creation as identified in the literature review. These videos are close-captioned, high quality, and uploaded at YouTube.

UAA uses Blackboard as the Learning Management System (LMS) for grades, student discussion boards, and announcements. Students are familiar with receiving weekly updates via Blackboard and that is where I embedded the poultry module videos for them to view. I included

written, step-by-step, instructions on how to fabricate poultry into the various required cuts, and posted my lecture notes and outline for students to view in their Blackboard course shell as well.

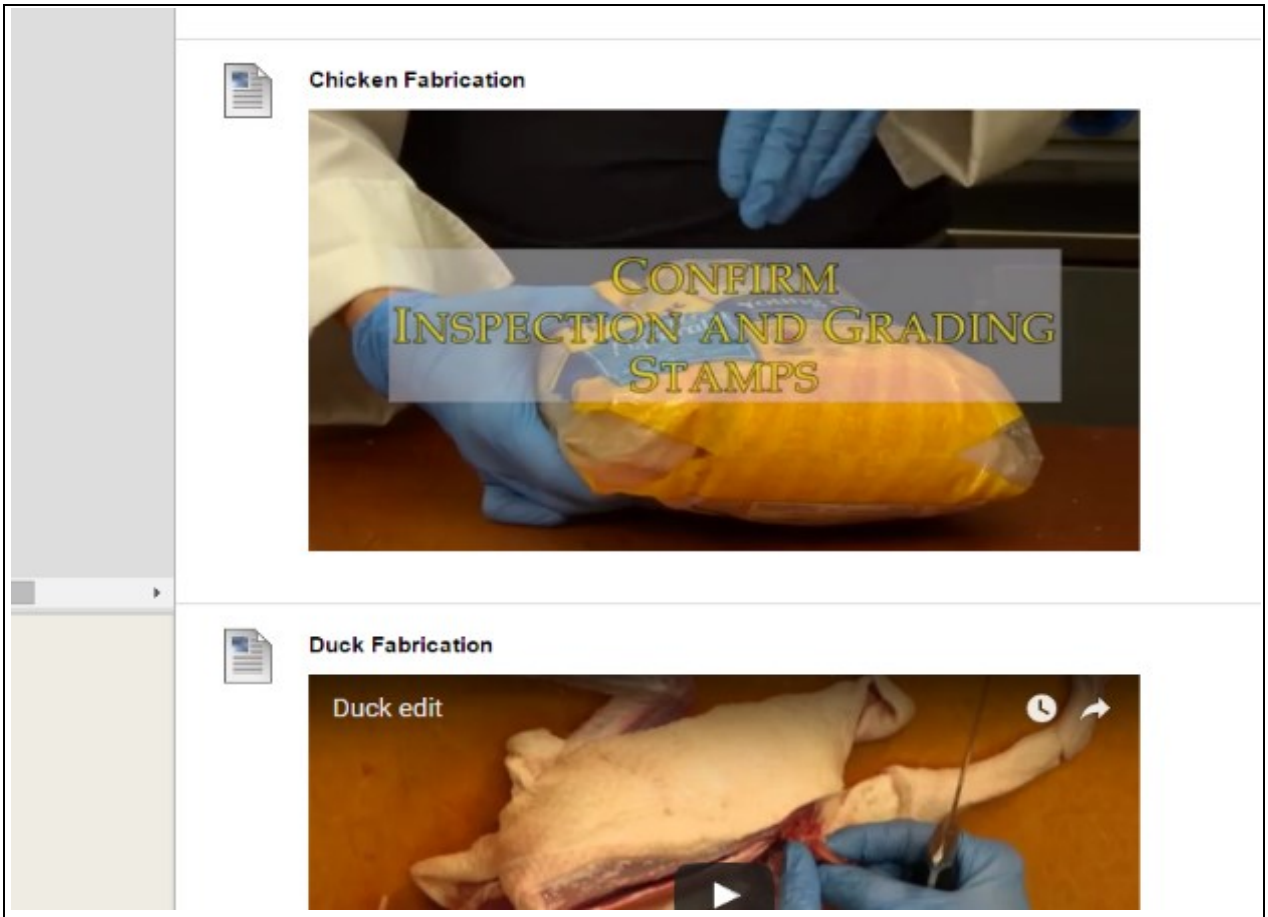

Figure 3.1. Poultry demonstration screenshot. Chicken and duck fabrication demonstration was recorded, uploaded to You Tube, and inserted into the *Skill Development* weekly module for poultry in Blackboard.

Setting

I conducted the research at UAA's Cuddy Hall in the culinary lab kitchen, where I currently serve as an Assistant Professor. The university laboratory is representative of a standard professional production kitchen as well as stand-alone culinary institutes. UAA is traditional as a culinary arts institution in respect to the fundamental classic, professional cooking techniques taught. However, we are untraditional in that our students are required to

obtain general education credits required for an associates or bachelor's degree and are a public university. Also, our programs are two and four years with only two semesters actually spent in the kitchen lab. Our lab sections are 15 weeks long, or seven week blocks (for advanced culinary, restaurant class). Many private culinary schools also offer a two-year associates or four-year degrees in hospitality, but these years are spent strictly in culinary or hospitality-related courses that can run in three- to four-week block sections.

We also have much smaller enrollment than some of the private culinary institutes. Our unduplicated headcounts are between 100 and 120 per year while, for example, the Culinary Institute of America has an undergraduate enrollment of over 2,700 students (US News, 2015). UAA has graduated only 800 culinary degree seeking students since 1972 (Culinary Arts Hospitality & Restaurant Management, 2012). Our program is accredited through the American Chefs Federation and we meet all of the criteria for standard culinary curriculum offerings.

Participant Safety, Equity, and Reciprocity

In compliance with federal and institutional guidelines to ensure protection of human subject research participants, I completed the UAA's IRB training over the summer of 2015. I received an expedited review because the research being conducted was held in an established and commonly accepted educational setting, involving normal educational practices. Since I was the instructor for this course I was careful to explain to the students that participation in research activities was entirely voluntary and had no impact on their grade or their standing with UAA. I invited all students to participate in the study with an in-class announcement as well as an announcement through Blackboard. A week before the poultry module began I gave them a copy of an informed consent form (see Appendix A) explaining the study objectives and their rights as research participants, which gave them adequate time to review the process and ask any

questions they may have had. I did not collect the hard copy consent forms. In order to maintain anonymity, the consent form was administered via Qualtrics with a link available in Blackboard where they were able to agree or decline to participate in the study. Students were also informed that should they wish to not answer certain questions or discontinue the survey at any point, they had the freedom to do so without repercussion. At the conclusion of data collection, all of the students enrolled in the *Skill Development* class who were invited to participate in the survey received a thank you e-mail containing my contact information and were thanked, as actual participation of any one individual student was not verifiable.

Participants

Data were collected in the fall of 2015. Nine students in two separate sections took my *Skill Development* class and all were invited to participate in the study. Ultimately, eight students out of the 10 completed the study activities, though all of the students completed the skills portion of the module as that is a standard requirement of class participation. The students ranged in age from 18 to 65, and were all females as no males enrolled. The participants were diverse in their cultural backgrounds, and their career aspirations were unique to their own, but traditional in the realm of the different fields within the food service/hospitality industry. Some examples of the careers they were pursuing were opening a catering company, learning to create diverse and delicious food for diabetics, opening a bakery, opening a remote lodge, opening a restaurant, and running a hotel.

All of the students received the same treatment of curriculum as regularly scheduled in the course syllabus. This curriculum is part of regular class activities and data were only recorded from students willing to participate in the research project. The blended classroom model was distributed in week 10 of the semester and students were used to the regular teaching

format of in-class lectures and skills demonstration. This being mid-way through the semester, I was familiar with their individual skillsets in the kitchen laboratory environment.

Data Sources and Collection

As the research was exploratory in nature, I did not approach the trial with a hypothesis to prove or disprove; rather, I expected student's responses to provide insight as to whether they liked the blended learning environment, if their learning was improved, and how they compared their experience to a traditional face-to-face classroom delivery model. Data collection included two components: knowledge and skills demonstration and student feedback.

Skills and knowledge. For knowledge and skills, all students' performance was measured against a rubric I designed to align with industry standard fabrication techniques. Through attending culinary school and working under the tutelage of several professional chefs, the rubric was designed to align with not only what I have been shown consistently in how to fabricate chickens over the years, but also to replicate the fabrication proficiency standards set out by the American Culinary Federation (ACF). The rubric was designed to carefully articulate each specific skill set of disassembling the chicken into its various parts to create reliability and consistency to use as a performance measure. Particularly, I focused on the students' ability to recognize structure of muscle tissue, joint articulation of tendons with muscle tissue, and poultry anatomy. I assessed the students' skill levels in identification of the specific cuts of the bird, sanitation, and overall proficiency. The full *Poultry Fabrication Rubric* is available in Appendix B.

These skills were demonstrated in the video presentations and students were aware of the target outcomes. The rubric was distributed via Blackboard prior to the poultry module week as well as written step-by-step instructional techniques on fabrication. I observed students'

fabrication techniques on two separate occasions. The first week, each students was assigned a chicken and duck to fabricate and the following week, each of them cut up another chicken. All nine students participated in this assignment. An average score of the two weeks was documented on the rubric. These findings are presented as individual scores and averages in Chapter Four.

Student perceptions. Drawing from the literature review, student engagement and interest are important to and conducive to learning (Berrett, 2012; Vaughan, 2007), therefore in addition to the skills they were able to demonstrate, I was also interested in the students' perceptions of the poultry fabrication video demonstrations. I created an electronic survey instrument for the poultry module that was sent to students via Blackboard and their university student email accounts. The survey recorded and considered the students' perception of participation in a blended learning course delivery environment, offering a mixture of Likert style questions and free responses. When designing the survey I sought to design questions that would elicit whether the students felt greater engagement, if they felt having the added video resources were beneficial, and whether they had read the materials in the first place. I tried to ask questions that would encourage responsive feedback about their learning styles as well. I asked questions that were reflective of the information of how students respond in a blended classroom from the literature I had read and from my own curiosities developed from years of teaching culinary. The Likert questions were primarily focused on perception, while the free responses were designed to give more intricate feedback as to not just how the students felt about the whole process but whether or not they learned in a more efficient way. I wanted to see if their responses paralleled the literature I reviewed for this project. Students electing to participate were

prompted to continue to the survey and were given full disclosure of the results of the findings once the study was complete. The full instrument in included in Appendix C.

Data analysis

Data came in two forms: observation data as recorded by the rubric, and perception data measured by the survey. Data analysis employed both quantitative data techniques (measures of central tendency) and qualitative techniques (identification of themes). Due to the limited number of student participants, the findings are descriptive in nature.

Skills and knowledge. The fabrication outcomes were scored against a rubric through in-class observation. The rubric addressed nine specific subskills, and was organized so a score of five indicates mastery level, scores of four and three indicate adequate or acceptable performance, and any score below three indicates that the students' demonstrated skill level does not meet industry standards, and thus needs further development. Analysis used crosstabs to examine individual student performance, as well as class averages on each specific subskill. The performance on subskills allowed me to compare their skills against the target skills as presented in the videos themselves, and serve as a mechanism to evaluate both student performance and the video's applicability.

Student perceptions. Analysis of the quantitative survey responses used basic measures of central tendency, as appropriate to the small number of participants. When I analyzed the free-response survey questions, I looked for common themes and patterns in the students' answers and perceptions, as well as any unusual or insightful feedback that may help me better understand how to deliver this type of course material. Though students could share whatever they wished in their open-ended responses, the research questions for the project focused on self-

reflection, and extraneous statements unrelated to the research objectives were excluded from the analysis, for example, statements made about the program staff.

Summary

In fall of 2015 I collected data from eight students in my *Skill Development* class, with two foci: their ability to perform in a blended learning environment, and their perceptions of their learning experience. The information provided through the data proved insightful and useful in my understanding of the blended learning experience from my students' perspectives. The findings and the analysis will be presented in chapter four of this paper.

Chapter 4 Findings

In the fall semester of 2015, I conducted a study of how culinary students respond to a blended learning, or a web-enhanced, learning environment. This research took place at Cuddy Hall on UAA Anchorage campus in the laboratory classrooms of Culinary Arts. Students enrolled in the Skill Development course were evaluated by a rubric on their ability to fabricate poultry during their regular class period. Prior to this class they were instructed to watch a video demonstration on how to appropriately cut up chicken and duck. The poultry module lasted for a two-week period and once concluded, the students' skills were assessed using a rubric and they were surveyed about their experience. The class enrollment numbers during this semester were uncharacteristically low, about half of our available capacity. A typical semester enrollment in the *Skill Development* course is an average of nine students for each section with two sections offered per semester. This semester there were only a total of 10 students between the two sections, one of whom dropped the course after the second week of the semester. Both classes also consisted of only female students; however, there was typical characteristic diversity in age and cultural backgrounds found in previous classes. In this chapter I will present the data and an analysis of the data collected.

Skills and Knowledge

Students were assessed on their ability to accurately fabricate a whole chicken into eight or six parts against the *Poultry Fabrication Rubric*. The first week each student was required to fabricate one chicken and one duck. The second week each student was required to fabricate one chicken. The rubric details the specific expectations and proficiencies associated with such a task. Each student and I reviewed their finished product and agreed on an average score for the two weeks. The scores were primarily high; greater than a three on a scale of one through five.

Table 4.1 shows these scores and the average marks per student and performance per fabrication skill assignment.

The rubric showed that in most areas of fabrication techniques the students scored closest to meeting the standard and still needing some improvement with their poultry fabrication techniques. None of their scores fell within the range of not meeting the minimum standard criteria. Boneless breasts, wings, and sanitation scored highest to meeting the standard, while the average skillset with the bone-in thigh scored on the low end of needing improvement.

Student Perceptions

Through the series of questions on the distributed survey, I gathered information on whether the students utilized the poultry demonstration videos as learning resources for the class. I was curious to see if they would go back and watch them again and if they felt having the videos was a valuable tool in conjunction with lecture. I also wanted their feedback on what portion the videos played in their preparation, comprehension, and performance through the module.

Use of course materials. Students were asked if they had watched the poultry fabrication videos prior to the class period in which they were going to be required to fabricate a chicken. They were surveyed on what type of device they viewed the video in order for me to get an understanding of where they may be doing their homework. Students reportedly viewed the video presentations on laptops, home computers, and their iPads. None of them responded that they had viewed the video materials on their mobile device. This was a personal curiosity to see how they were studying, and their responses led me to believe they were at their primary residence when reviewing the video materials rather than on-campus or in study groups. I also asked how many times they viewed

Table 4.1

Raw Scores and Averages of Poultry Rubric

Student Identifier	Boneless Breast	Airline Breast	Boneless thigh	Boneless thigh with leg	Bone-in thigh	Bone-in Leg	Wings	Carcass	Sanitation	Individual student average
A	5	5	.	.	4	4	5	4	5	4.6
B	5	5	5	5	4	4	5	5	5	4.8
C	5	5	5	5	5	4	5	4	5	4.8
D	4	3	4	4	3	3	4	4	4	3.7
E	5	5	4	4	5	5	4	4.5	5	4.6
F	4	3	4	4	3.5	4	4	4	5	3.9
G	4	5	4	5	4	5	5	4	5	4.6
H	5	3	4	4	3	4	5	4	4	4.0
I	4	4	4	3	3	4	5	4	4	3.9
Average Performance	4.6	4.2	4.3	4.3	3.8	4.1	4.7	4.2	4.7	4.3

Note. Though there were variations in student scores most areas of fabrication techniques scored closest to meeting the standard and still needing some improvement with their poultry fabrications techniques. None of their scores fell within the range of not meeting the minimum standard criteria. A period denotes that a student did not perform this skill due to time constraints.

the online materials before and after the first class, to see if there was any correlation to their in-class poultry rubric scores, and whether or not they had read the chapter of poultry in their textbook. Eight students, out of a total of nine enrolled in the two *Skill Development* courses, chose to participate in the survey. However only seven completed the survey in its entirety. Out of all surveyed students, 100% responded that they had watched the poultry fabrication videos before the first week of poultry class. Of that figure, 71% responded that they viewed the fabrication video after that first week (see Figure 4.1). Three out of the seven student responders indicated that they had not read their book for this learning module. In response to their opinion of the video quality, six out of seven said the video was of professional quality and only one said it was an average production. No one indicated that it was of poor or mediocre quality even when presented with these options. One interesting finding was student's motivation to actually watch the video. Using a Likert scale of 1 to 10, 10 being most motivated, only one person hovered around neutrality by rating themselves at a 6, three students said 10, and the remainder scored 9 (two) and one 8.

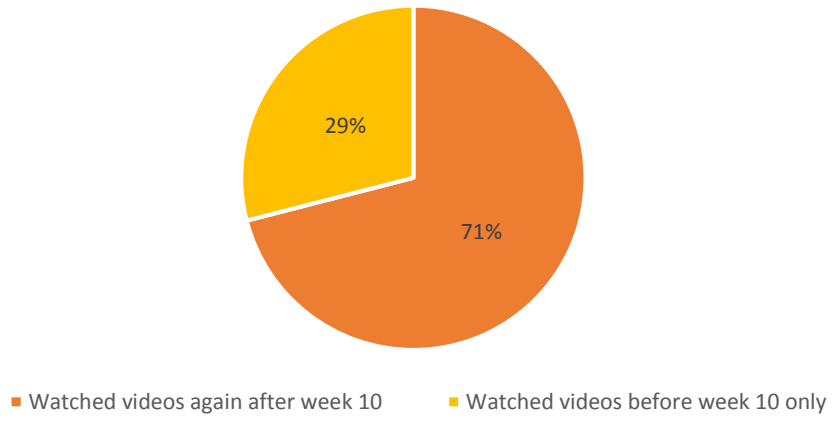

Figure 4.1. Student views of poultry videos before and after initial class. While 100% of students watched the poultry fabrication videos before the poultry class only, 71% indicated they reviewed the videos again after the class.

Video utility. The quantitative responses showed that all of the students liked having the poultry module videos available to watch and found it to be a beneficial learning tool. This is consistent with literature written on student's genuine keenness on having meaningful media materials to view in addition to face-to-face lecture (Bolliger, et al., 2010). When asked if they felt the video had been useful in developing an understanding of poultry fabrication, three students called the video "extremely useful," and two rated the usefulness at an eight, one at a seven and one at a six on the Likert scale. Figure 4.2 depicts students' responses.

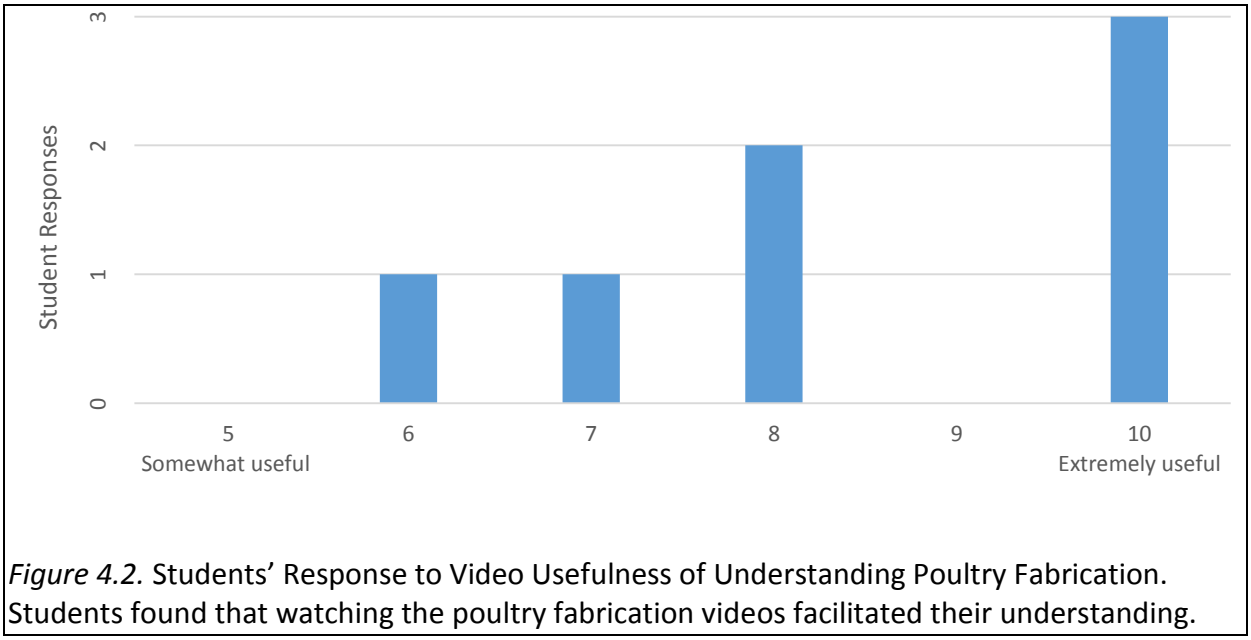

Figure 4.2. Students' Response to Video Usefulness of Understanding Poultry Fabrication. Students found that watching the poultry fabrication videos facilitated their understanding.

In response to the question that asked if watching the videos helped increase their confidence level in poultry fabrication, all but one student rated their confidence at a seven or above; five being somewhat confident and ten extremely confident. Confidence went up after watching the videos because they had an introduction of understanding what they were getting into before they ever took their birds out of the cooler; familiarity was built.

Students responded with free responses that reflect on these findings with statements such as:

- "The videos were a good companion to the in class demo"

- "The videos were a welcome supplement. I think having both is helpful."
- "think it's a great tool that is underutilized."

Students showed general enthusiasm in having the videos available as supplemental material. They were positive about the videos, both in their quality and execution as well as the facilitation of the learning objectives for the poultry module.

Learning. Some of the most interesting findings from my data collection were in students' perceptions of their own learning, which offer insight into curriculum design. My analysis of the free responses yielded three major themes: lecture cannot be completely replaced with video, the videos allowed students to accommodate their own learning styles, and having video helped students learn in three domains: preparation, comprehension, and performance and recall. Students said they liked the blended leaning experience and that the utilization of video presentations was a beneficial learning tool.

Videos cannot replace demonstration. When asked if the in class lecture could be replaced by watching a video, the overwhelming student feedback was no, the face-to-face time was fundamental to their learning, primarily in regard to the demonstration piece. All of their responses were consistent that while many lecture components could be replaced, practical demonstrations still needed to be reproduced face-to-face. Effectively, eight out of the nine students made the same statements, some of these comments are presented below:

- "I would not choose [videos] over face to face for such a tangible class. I would love to have had both all semester."
- "The video was great :) … I still think it is very, very important to show an in class demonstration! ☺"

- "I think having both is helpful. I love face-to-face learning, but I also thought the video was very useful."

Videos accommodate multiple learning styles. Students also talked about how watching the videos allowed them the ability to utilize this tool to benefit their personal learning style. One student commented that "It was nice I was able to stop and pause and write down my own notes at my own pace," while another said "having the ability to watch the fowl fabrication on video, [sic] gave me the [opportunity to] rewind and instantly review the production." Another commented that, "This is a learning process which works best for me. Generally a three part learning process. Reading, watching, and doing." These insights into how the students were able to utilize the videos as personal learning tools solidified for me that this instrument is a beneficial resource to incorporate into their learning modules. This mirrors Tiernan's (2015) findings about digital video in university teaching: students liked the flexibility of being able to access materials on their own time and as often as they chose.

Videos facilitate learning. They also indicated that having the videos helped them prepare, comprehend, and recall. Having the ability to view the fabrication demonstration before class time allowed for memory recall when approaching the assignment. They came prepared with detailed prep lists, and in my opinion, a confident demeanor because they knew what to expect. Select student quotes that represent this finding are present in table 4.2.

Table 4.2

Students' Free Responses to How Video Affected Their Learning

Learning domain	Representative student quotes	
Preparation	"It was nice knowing what we were going to do the next day in class. Even though Chef Naomi showed us again in person, it was helpful to have some prior knowledge."	"It helped you prepare for class, giving you hands on knowledge and got you thinking about how you would execute your duties."
Comprehension	"It was useful because I could watch a tricky part over and over."	
Performance & recall:	"It was hands on, making it easier to follow and remember how to execute the fabrication."	

Note. Thematic analysis of student comments showed three trends that they prepared, comprehended, and performed.

Discussion

The *Skill Development* course is an intensive 15-week class that has a tremendous amount of information to cover in each learning section, or weekly module. Cruse (2011) found that incorporating video segments into regular curriculum has been effective in emphasizing key learning objectives that are personalized and deliverable outside the classroom. I perceived that watching a video presentation on poultry fabrication prior to actually having to complete the assignment themselves, might be a timely learning tool to supplement their laboratory assignments.

Prior to my class, not one of my students had ever cut up a chicken to the specifications required as listed in the rubric by which they were assessed. At the end of the two weeks they had fabricated two chicken and one duck. In order to gain proficiency in perfect fabrication of poultry, they will need to practice until they gain full understanding of the anatomy of such an animal. For instance, reviewing the class averages of performance in chicken fabrication showed that the bone-in thigh and bone-in leg scored lowest on the rubric measure and was in need of improvement. From watching student performance, I surmised this primarily was due to the student's inability to recognize where the leg and thigh bone articulate with one another and being able to cleanly separate the cartilage without damaging either side. In time and with repetition, this becomes second nature. Other parts of chicken fabrication are far more intuitive because the student is able to better see where the muscle tissue separates from the bone because the skin has been removed or separated from the flesh.

My findings demonstrate that my *Skill Development* students found the blended learning module easy to work with because of their proficiency with technology and the familiarity with the nature of an online environment. In Prensky's (2001) work on digital natives he states,

> today's teachers have to learn to communicate in the language and style of their students. This doesn't mean changing the meaning of what is important, or of good thinking skills. But it does mean going faster, less step-by step, more in parallel, with more random access, among other things. (p.4)

Introducing the poultry videos to my students before they ever entered into the classroom took the place of the lecture time I would normally spend going over the details. The visual aide of

seeing the fabrication piece prior, I believe, had greater meaning than any picture I could have drawn on a white board in the classroom.

My data results correspond with Bell and Federman (2013) and Vaughan's (2007) findings that with blended learning, the students feel they have greater control of their learning outcomes, like not having to sit through so much lecture, because it allows them more time to actually do their lab work and provides a resource outside of the classroom that helps them become better prepared. I too felt as if I had more time after the developmental phase of the blended module to spend longer periods with my students in the lab and provide more hands on, one-on-one instruction.

Implications

Throughout this project I learned about the advantages of a blended classroom and how online engagement can facilitate greater learning outcomes for students. I can identify implications for myself personally, for culinary arts instruction, and for the hospitality industry. The positive response from my students regarding the exposure to this type of learning environment has transformed my approach to teaching.

Within my experience over the last year I have found great personal benefit by incorporating these techniques into my course delivery. I created demonstration videos, held discussion boards, and generated more time within the laboratory for students by freeing up time usually spent in lecture. With these extra moments, my students were able to work on more recipes and I was able to have more one-on-one time with them. This, paired with the discussion boards, allowed me to build interpersonal relationships with my students which gave insight into their unique learning styles and how to better respond to their needs. I learned a great amount of tools related to distance education delivery through this process and

ultimately I plan on moving forward with this mode of teaching for my skill development classes as well as my *A la Carte* class where applicable. This project has enticed me to become curious about whether this blended learning of teaching will be beneficial with increased numbers of students in the laboratory classes. I am keeping the format for the poultry module and incorporating video and more lecture materials in every other module I teach throughout the semester where appropriate. I plan on creating an end-of-course survey to informally solicit my students' opinions and perhaps have them compare and contrast their experience within my classroom with their co-requisite, traditional face-to-face baking course.

These preliminary findings suggest opportunities to change some of the delivery methods in the field of culinary arts instruction that would facilitate student learning, use of course materials, and engagement. Not only will our department at UAA benefit by incorporating a blended learning style of teaching, but this model could inform how other culinary programs function. The practicality of cost savings by freeing up classroom space for other ventures and the great amount of information that can be presented to the students with a log-in to their LMS on their mobile devices is unprecedented. There are thousands of short video presentations that could be created to show simple, seconds-long, videos demonstrating techniques that could help jog a student's memory of something seen in the classroom or even introduce a new principle without having to spend the time discussing in lecture.

With greater exposure to the intricate nuances of cooking, inventory control, and overall kitchen dealings, students have the potential to possess more of the skill sets restaurants are looking for when hiring employees. If, in culinary school, students had more hands-on training on solutions to common problems that arise, our industry could potentially save resources of time spent training and product loss. For instance, if a student does not have the

hands-on time to fix a sauce that they make incorrectly while in school, they will not possess that skill in the workplace. However, if a student had seen a video on the several ways to make a sauce thicker, or thinner if needed, they would have some basis of information to draw upon.

Future Applications

There are many techniques, so much information, a remarkable amount of French and general terminology, and fine distinctions in professional cooking that it would be impossible to teach them all within two semesters of practical labs. Blended learning may not be the solitary solution to teaching every one of these components, however, it certainly allows for greater opportunities for those elements to reach students. Learning is potentially enhanced by the distribution of materials in more formats than just a textbook or lecture.

While the research literature spoke of greater perceived student engagement, my study results only spoke strongly of the learning benefit of a blended learning delivery model. My instrument did not solicit adequate feedback on the topic of engagement. However, I saw in the classroom, first-hand through student performance, that they were eager to participate in their cooking assignments, involved in creating personal twists with their recipes, and were talking with one another about their processes. In future research surveys, I would like to ask different and perhaps better questions that would solicit data to examine how the blended learning environment provides new opportunities for engagement.

I would also like to collect data from a larger sample of students. While my perception is that regardless of the class size, blended learning provides a better teaching tool for culinary students, a larger sample base would provide greater opportunity to build stronger correlations to themes and ideas that would better help my assessment of what works and what does not. Also, with a larger class size, there is less opportunity for one-on-one time with the instructor

and it can be challenging for each student to closely see the in-class demonstrations due to the design of the laboratory facility. For this reason, students' ability to review the demonstration outside of the classroom would be beneficial. From a larger, more diverse group I would expect that new ideas and opinions would surface about student learning and perceived needs. Over a period of time, these results could be used to inform interdepartmental classes, other culinary schools, and industry partners for training tools.

Limitations

Though my research project was conducted with integrity and did show some positive opportunities for blended learning in the culinary arts classroom, there were some clearly identifiable limitations. I only offered demonstration videos during one, two-week lesson in a 15-week semester. I did, from that point on, begin to embed videos from You Tube on different subjects we were covering in class. Subjects that delivered new or diverse information to the students such as sustainable fishing and shellfish harvesting, as well as any other pertinent information I could find, I embedded in their LMS. However, being able to survey the results of more modules and exposure to the blended learning environment would yield additional data.

Another limitation was my inexperience with creating video presentations. Some of the scenes in the video I shot did not give a clear or precise angle of the fabrication technique due to where the camera was situated. Ideally, a camera would be positioned directly below my chin to give the exact same perspective view the student would have when they went to cut the chicken themselves.

I have not reached out to fellow culinary colleagues at other culinary schools and I do not know the nature of how all budding culinarians think or would feel about a blended

learning format in their program studies. Testing the method in other schools with other curricula is another area of opportunity. Because I conducted this research project in my own classroom, my students could have felt as if they were obligated to give positive and encouraging feedback even though their responses were collected with complete confidentiality. Nevertheless, I feel as if their answers were carefully thought out and truthful. Still, there is opportunity for follow-up in other settings. Even there are identifiable limitations and some were present within my research, the study was administered with honesty and collected good, preliminary data that provides valuable insights to all culinary arts instructors.

Summary

While I experienced some personal limitations through my blended module learning study, I am encouraged by the findings. The performance assessment paired with the ability for students to have the opportunity to view what was expected of them before they entered into the classroom garnered positive feedback from all of the students. They felt that the addition of the videos to their regular classroom structure enabled them to have a clearer idea of what the expectation was for that assignment. I am optimistic that this style of teaching could be greatly beneficial to students and instructors within a culinary arts laboratory setting.

Chapter 5 Conclusion

The purpose of this study was to determine whether a blended learning delivery format would benefit student learning in a culinary arts laboratory setting. By incorporating distance learning techniques through video demonstrations, I found the blended learning environment enhanced my students' learning and their reactions to the process were positive. I was able to spend more time in the laboratory in hands-on activities by presenting the lecture materials online prior to their class.

After completing the two-week poultry module, my perception was that there was increased engagement and the data collected showed students' aptitude when working with the product and information assigned. I also felt that the interpersonal connection between myself and the students in the classroom improved and this significantly changed my opinion of how I would approach my teaching methods moving forward. While the poultry module videos were the only materials I have had the time to create, I have been able to locate additional production, fabrication, or informational videos that are free for public use to include in the modules that followed the poultry two-week modules.

Trying to cover the finite details in cooking is challenging. In teaching lecture and laboratory classes I have found students retain the information, principles, and techniques with repetition and practice. Reiteration of the lecture piece while they are working is another element that promotes retention. Having the opportunity to see what they would be working with before they come to the classroom has been a significant asset and through informal conversation, many of my students have expressed how much they appreciate this added material. For instance, in spring 2016, I included a video of how to clean a beef tenderloin, from a You Tube posting, in the *Skill Development* Blackboard shell. All of my students said

they felt far more comfortable coming into the classroom to complete this task because they had some idea of what to expect. Moreover, I found the classes that watched the tenderloin video in advance possessed a calmer and more confident demeanor when approaching the task than in students I had observed before. The students in these classes seemed able to complete their task in a timely manner, whereas in the past, I found more students struggled with self-assuredness.

I cannot speak highly enough of how beneficial this delivery system has been to my *Skill Development* laboratory classroom. This teaching method has created excitement, engagement, and greater learning amongst my students. I have been inspired by the results! My ability to increase the information I share with my students has improved and therefore, through less time in lecture, I am able to give them a much broader spectrum of information. Going forward, my next steps are to continue to incorporate video supplements into my learning modules, create my own demonstration vignettes, and demonstrate within my department how to incorporate this style of teaching across our discipline. I would like to have the opportunity to present and share my preliminary findings with other culinary arts instructors at conferences to see what their impressions and feedback would be. I highly recommend all culinary classroom instructors consider adopting the blended learning technique of teaching.

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Appendix A

Informed Consent Form

Researcher

Naomi Everett
Culinary Arts, Hospitality & Restaurant Management Div.
University of Alaska Anchorage
907.786.1405
neverett@uaa.alaska.edu

Faculty Advisor

Dayna Jean DeFeo, PhD, Curriculum & Instruction
907-786-5494

Description

The purpose of this study is to understand the impact on student learning outcomes when a blended learning environment is implemented in a culinary arts skill development program.

Objectives

I plan on measuring fabrication skillsets by observation in conjunction with a standard rubric measurement tool during regular class periods. I want to understand what your evaluation of the blended learning delivery system and whether you felt it beneficial or not. The information you share will be used to inform a case study report for my MS project in CTE and to gain insight in teaching methodology. These data may also be presented at conferences or in academic journals.

Process

If you consent to participate in this study, I will send you a survey that asks you a series of questions to evaluate your experience throughout the process.

Time Commitment

The survey will take 10 to 20 minutes, depending on how much you wish to elaborate on the questions. There are no ongoing obligations.

Voluntary Participation

You may choose not to participate in the study and it will have no impact on your relationship with the Culinary Arts department, your instructors, the University of Alaska, or your grade. If you decide to participate and change your mind, you may discontinue completing the survey. You may also refrain from answering specific questions at your discretion.

Non-confidentiality

All consent forms and your anonymous electronic responses will be stored indefinitely in a locked filing cabinet or on password-protected computers and viewed only by members of the research team. If published, some of your exact quotes may be used; your responses will be anonymous, your given name will not be associated with such quotes.

Potential Benefits of Study
There are no direct benefits to participants, however, some participants may find it beneficial to reflect on their experiences. Additionally, your responses may be used to improve programs.

Potential Risks to Participants
This study presents no foreseeable risks to you personally or professionally.

Contact
If you have questions about the research study, please contact me (phone and email listed above). If you have questions about your rights as a research participant, please contact Sharilyn Mumaw, UAA Research Compliance Officer at (907) 786-1099.

Researcher
Naomi Everett
Culinary Arts, Hospitality & Restaurant Management Div.
University of Alaska Anchorage
907.786.1405
neverett@uaa.alaska.edu

Faculty Advisor
Dayna Jean DeFeo, PhD, Curriculum & Instruction
907-786-5494

Please sign one copy of this form and retain the other for your records. Thank you for completing the informed consent process.

Print Name_____
Signature_____
Date_____

Appendix B

Poultry Fabrication Rubric

Proficiency	Meets Standard	Needs Improvement	Does not meet standard
	5 points	**4-3 points**	**2-0 points**
Boneless breast	Breast meat is intact with tenderloin, no cartilage remains. Skin is intact and completely covers the breast meat. Excess fat and skin have been trimmed.	Breast meat is intact with tenderloin, some cartilage is present. Skin is intact and completely covers the breast. Excess skin and fat have been trimmed.	Breast meat is mostly intact, tenderloin has been removed, and cartilage is present. Skin does not completely cover the breast meat and excess fat and skin have not been trimmed.
Airline breast	Breast meat is intact with tenderloin. Wing segment is intact and frenched. Joint is free of cartilage and unbroken. Skin is intact and completely covers the breast meat. Excess fat and skin have been removed.	Breast meat is intact with tenderloin. Wing segment is mostly intact and frenched. Joint is mostly free of cartilage and unbroken. Skin is intact and completely covers the breast meat. Excess fat and skin have been removed.	Breast meat is mostly intact, tenderloin has been removed. Wing segment is mostly intact and not frenched, or wing segment is not present. Joint is not free of cartilage and broken. Skin is somewhat intact but does not completely cover the breast meat. Excess fat and skin have not been removed.
Boneless thigh	Thigh meat is intact with no cartilage remaining. No pockets of arteries remain, skin is intact.	Thigh meat is mostly intact with no cartilage remaining. No pockets of arteries remain, skin is mostly intact.	Thigh meat is not intact/missing muscle tissue and cartilage is present. Pockets of arteries remain, skin is somewhat intact or torn and does not cover meat.
Boneless thigh with leg	Thigh and leg meat are intact with no cartilage remaining or tendons. Oyster is present. No pockets of arteries remain, skin is intact.	Thigh and leg meat are mostly intact with no cartilage remaining. Oyster is partial or cut into. Some tendons are remain. No pockets of arteries remain, skin is mostly intact.	Thigh and leg meat are not intact/missing muscle tissue, oyster, and cartilage is present. Tendons remain and pockets of arteries remain, skin is somewhat intact or torn and does not cover meat.
Bone-in thigh	Thigh meat is intact and the oyster is present. Ball joints resemble clean molars. Skin is intact and covers meat.	Thigh meat is mostly intact. Oyster is partial or cut into. Ball joints resemble clean molars. Skin is mostly intact and mostly covers meat.	Thigh meat is mostly intact. Oyster is not present. Ball joints do not resemble clean molars and have been cut through. Skin is somewhat intact or torn and does not cover meat.

Bone-in leg	Leg meat is in intact. Ball joint resemble a clean molar. Skin is intact, timed neatly and covers a majority of the meat with the exception of where the muscle separates from the thigh.	Leg meat is mostly in intact. Ball joint resemble a clean molar. Skin is mostly intact, timed neatly but does not cover the majority of the meat.	Leg meat is mostly in intact. Ball joint does not resemble a clean molar and has been cut through. Skin is somewhat intact or torn and does not cover meat.
Wings	Wing segments are cleanly cut through the cartilage with meat intact. First segments have no excess breast meat in place. Excess skin and fat have been neatly removed.	Wing segments are cleanly cut through the cartilage with meat intact. First wing segments have some breast meat in place. Some of the excess skin and fat have been neatly removed.	Wing segments are not cleanly cut through the cartilage and meat is not intact. First wing segments have some breast meat in place. Excess skin and fat have not been removed.
Carcass	Carcass is intact and free from excess meat on the keel bone, ribs, thigh (oyster is not present). Wishbone has been removed. The shoulders, thigh and leg bones are free from excess meat.	Carcass is mostly intact and free from excess meat on the keel bone, ribs, thigh (oyster is not present). Wishbone has been removed. The shoulders, thigh and leg bones are mostly free from excess meat.	Carcass is broken or cut through and has excess meat on the keel bone, ribs, and thigh (oyster remains). Wishbone has not been removed. The shoulders, thigh, and leg bones are not free from excess meat.
Sanitation	Student exhibits exceptional food sanitation principles, the safe and sanitary handling of poultry. Student shows leadership in maintaining the cleanliness of individual station, kitchen equipment, walk-ins, and collective areas of the kitchen lab.	Student exhibits expected food sanitation principles, the safe and sanitary handling of poultry. Student generally maintains cleanliness of individual station, kitchen equipment, walk-ins, and collective areas of the kitchen lab.	Student does not adhere to or exhibit expected food sanitation principles or the safe and sanitary handling of poultry. Students' individual station is a mess. Student does not maintain the cleanliness of kitchen equipment, walk-ins, and collective areas of the kitchen lab.
Total Points			

Appendix C

Poultry Fabrication Survey

(1) Informed Consent Form. I agree to the terms and conditions of the above consent form.

- ❍ Yes
- ❍ No

(2) Did you watch the poultry fabrication video before week 10 class (First poultry week)?

- ❍ Yes
- ❍ No

(3) What device did you use to view the video? Choose all that apply.

- ❍ Laptop
- ❍ Home computer
- ❍ Mobile device
- ❍ iPad
- ❍ Other _____

(4) Did you watch the poultry fabrication video after the week 10 class?

- ❍ Yes
- ❍ No

(5) How many times did you view the poultry fabrication video?

_____ Before Week 10
_____ After week 10

(6) Did you find the poultry fabrication video helpful in your ability to deconstruct chicken and duck?

- ❍ 0 Not at all helpful
- ❍ 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5
- ❍ 6
- ❍ 7
- ❍ 8
- ❍ 9
- ❍ 10 Extremely helpful

(7) How would you rate the usefulness of this video in developing your understanding of poultry fabrication?

- ❍ 0 Not at all useful
- ❍ 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5 Somewhat useful
- ❍ 6
- ❍ 7
- ❍ 8
- ❍ 9
- ❍ 10 Extremely useful

(8) In your own words, please explain your answer to question #7.

(9) How would you rate the quality of the video?

- ❍ Professional
- ❍ Average
- ❍ Mediocre
- ❍ Poor

(10) What is the likelihood of you watching the poultry fabrication video again after the poultry section once the semester is over?

- ❍ Very likely
- ❍ Somewhat likely
- ❍ Undecided
- ❍ Unlikely
- ❍ Very Unlikely

(11) In other classes (ex: mire poix, pork, and beef) we had an in-class demonstration of fabrication to develop your knowledge and understanding. How does watching the video compare to the live demonstration?

- ❍ Much better
- ❍ Better
- ❍ Somewhat Better
- ❍ About the Same
- ❍ Somewhat Worse
- ❍ Worse
- ❍ Much Worse

(12) In your own words, please explain your answer to question #11.

(13) Did you like having the poultry fabrication video available to view?

- ❍ Yes
- ❍ No

(14) What is your opinion of this "blended learning" technique delivery as opposed to traditional face-to-face/lecture?

(15) Would you recommend all CA A103 modules be taught in this manner?

- ❍ 0 Would not recommend
- ❍ 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5 Recommend
- ❍ 6
- ❍ 7
- ❍ 8
- ❍ 9
- ❍ 10 Strongly recommend

(16) Please explain your answer to #15.

(17) Do you feel as if you had more time to complete the week's recipe assignments without the traditional in-class lecture?

- ❍ Yes
- ❍ No

(18) Do you feel as if the in-class lecture is a component that cannot be replaced by watching a video?

- ❍ Yes
- ❍ No

(19) In your own words, please explain your answer to question #18

(20) How motivated were you to watch the poultry fabrication video on your own time?

- ❍ 0 Not at all motivated
- ❍ 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5 Somewhat motivated
- ❍ 6
- ❍ 7
- ❍ 8
- ❍ 9
- ❍ 10 Extremely motivated

(21) Did you read the poultry chapter in your assigned text?

- ❍ Yes
- ❍ No

(22) Did you feel as if the video helped you better understand the poultry chapter

- ❍ Yes
- ❍ No
- ❍ I did not read the chapter

(23) How would you rate your confidence level in poultry fabrication after seeing the video beforehand in comparison to the beef tenderloin fabrication with an in-class only demonstration?

- ❍ 0 Not at all confident
- ❍ 1
- ❍ 2
- ❍ 3
- ❍ 4
- ❍ 5 Somewhat confident
- ❍ 6
- ❍ 7
- ❍ 8
- ❍ 9
- ❍ 10 Extremely confident

(24) Please feel free to share any further thoughts, ideas, or suggestions here.